

WHAT IS CLAIMED IS:

1. A method for highlighting a selected object on a display, the method comprising:
  - 5 rasterizing base graphic data to provide a base graphic raster, the base graphic raster comprising at least one graphic object including a selected graphic object to be highlighted;  
providing selection graphic data including a graphic object corresponding to the selected graphic object;
  - 10 rasterizing the selection graphic data to yield a selection graphic raster; and,  
compositing the base graphic raster and the selection graphic raster to yield an output graphic raster for display.
- 15 2. A method according to claim 1 wherein providing the selection graphic data comprises copying the selected graphic object from the base graphic data.
3. A method according to claim 2 wherein providing the selection graphic data comprises assigning a highlighting attribute to the  
20 copied selected graphic object.
4. A method according to claim 3 wherein rasterizing the selection graphic data to yield the selection graphic raster comprises  
25 assigning highlighting values only to pixels in the selection graphic raster corresponding to portions of the selected graphic

object that are not overlapped by other non-transparent graphic objects.

5. A method according to claim 4 wherein compositing the base  
5 graphic raster and the selection graphic raster comprises altering  
values of pixels from the base graphic raster which correspond to  
pixels of the selection graphic raster having highlighting values.
6. A method according to claim 2 wherein providing the selection  
10 graphic data comprises copying from the base graphic data non-  
selected objects that overlap the selected graphic object.
7. A method according to claim 6 wherein the highlighting attribute  
comprises a color attribute.
- 15 8. A method according to claim 6 wherein providing the selection  
graphic data comprises assigning a highlighting attribute to the  
copied selected graphic object.
- 20 9. A method according to claim 8 wherein providing the selection  
graphic data comprises assigning a blank attribute to the copied  
non-selected objects.
- 25 10. A method according to claim 9 wherein rasterizing the selection  
graphic data comprises assigning highlighting values to pixels  
associated with objects having highlighting attributes and

assigning non-highlighting values to pixels associated with objects having blank attributes.

11. A method according to claim 10 wherein compositing the base  
5 graphic raster and the selection graphic raster comprises altering values of pixels from the base graphic raster which correspond to pixels of the selection graphic raster having highlighting values.
12. A method according to claim 9 wherein the highlighting attribute  
10 and the blank attribute each comprise different color attributes.
13. A method according to claim 8 wherein rasterizing the selection  
graphic data to yield the selection graphic raster comprises  
15 assigning highlighting values to pixels corresponding to any objects in the selection graphics data having highlighting attributes.
14. A method according to claim 8 wherein the highlighting attribute  
20 comprises a color attribute.
15. A method according to claim 2 wherein rasterizing the selection  
graphic data to yield the selection graphic raster comprises  
25 assigning highlighting values to pixels corresponding to the copied selected graphic object.
16. A method according to claim 15 wherein compositing the base  
graphic raster and the selection graphic raster comprises altering

values of pixels from the base graphic raster which correspond to pixels of the selection graphic raster having highlighting values.

17. A method according to claim 2 comprising simplifying the copied  
5 selected graphic object.
18. A method according to claim 17 where simplifying the selected  
graphic object comprises setting a plurality of color attributes of  
the selected graphic object to specify one color.  
10
19. A method according to claim 17 wherein an exposed portion of the  
selected graphic object has an outline and simplifying the selected  
graphic object comprises replacing the selected graphic object with  
a shape bounded by the outline.  
15
20. A method according to claim 2 wherein an exposed portion of the  
selected graphic object has an outline and copying the selected  
graphic object from the base graphic data comprises replacing the  
selected graphic object with a shape bounded by the outline.  
20
21. A method according to claim 1 wherein the selection graphic raster  
comprises highlighting values corresponding to the graphic object  
corresponding to the selected object and compositing the base  
graphic raster and the selection graphic raster comprises altering  
25 values of pixels from the base graphic raster which correspond to  
pixels of the selection graphic raster having highlighting values.

22. A method according to claim 21 wherein altering values of pixels from the base graphic raster comprises replacing the values of pixels from the base graphic raster with the highlighting values of corresponding pixels in the selection graphic raster.
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23. A method according to claim 21 wherein altering values of pixels from the base graphic raster comprises, for each pixel to be altered, computing a function to modify the value of the pixel to be altered, the function based on at least one of: the value of the pixel to be altered and the highlighting value of the corresponding pixel in the selection graphic raster.
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24. A method according to claim 23 wherein the function comprises color inversion of the value of the pixel to be altered.
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25. A method according to claim 23 wherein the function comprises performing one of a plurality of available color modification operations and wherein computing the function to modify the value of the pixel to be altered comprises selecting one of the plurality of available color modification operations based on the highlighting value of the corresponding pixel in the selection graphic raster and applying the selected color modification operation to the value of the pixel to be altered.
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26. A method according to claim 25 wherein the plurality of color modification operations comprises one or more of:
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performing color inversion on the value of the pixel to be altered;

increasing the value of the pixel to be altered by a predetermined amount;

5            decreasing the value of the pixel to be altered by a predetermined amount; and,

             setting the value of the pixel to be altered to a predetermined value.

10    27.    A method according to claim 23 wherein altering values of pixels from the base graphic raster comprises altering values of selected ones of the pixels from the base graphic raster which correspond to pixels of the selection graphic raster having highlighting values.

15    28.    A method according to claim 27 wherein altering values of selected ones of the pixels from the base graphic raster comprises selectively altering values of pixels in accordance with a pattern.

20    29.    A method according to claim 23 wherein compositing the base graphic raster and the selection graphic raster comprises identifying contiguous regions of pixels in the base graphic raster where corresponding pixels in the selection graphic raster have highlighting values.

25    30.    A method according to claim 29 wherein altering values of pixels from the base graphic raster comprises altering values of a pattern

of selected pixels in the contiguous regions of pixels in the base graphic raster.

31. A method according to claim 23 wherein altering values of pixels  
5 from the base graphic raster comprises altering values of all of the pixels in the base graphic raster which correspond to pixels of the selection graphic raster having highlighting values.
32. A method according to claim 1 wherein providing the selection  
10 graphic data comprises replicating the base graphic data and modifying non-selected objects in the replicated base graphic data to have blank attributes.
33. A method according to claim 32 wherein the blank attribute  
15 comprises a color attribute.
34. A method according to claim 1 wherein providing the selection  
20 graphic data comprises replicating the base graphic data and deleting non-selected objects from the replicated base graphic data.
35. A method according to claim 1 wherein providing the selection  
25 graphic data comprises replicating the base graphic data and modifying selected objects in the replicated data to have highlighting attributes.

36. A method according to claim 35 comprising , modifying non-selected objects in the replicated data to have non-highlighting attributes.
- 5 37. A method according to claim 35 wherein the highlighting attribute and the blank attribute each comprise color attributes.
38. A method according to claim 1 wherein the selection graphic data and the base graphic data each comprise a file having a file format  
10 and the selection graphic data and the base graphic data have the same file format.
39. A method according to claim 1 wherein rasterizing the base  
15 graphic data is performed by a rendering engine and rasterizing the selection graphic data is also performed by the rendering engine.
40. A method according to claim 1 wherein compositing the base  
graphic raster and the selection graphic raster comprises  
20 identifying contiguous regions of pixels in the base graphic raster where corresponding pixels in the selection graphic raster have highlighting values.
41. A method according to claim 40 wherein compositing the base  
25 graphic raster and the selection graphic raster comprises altering values of a pattern of selected pixels in the contiguous regions of pixels from the base graphic raster.



42. A method according to claim 1 wherein the graphic objects in the base graphic data and the selection graphic data are elements of a graphic description language file or stream.
- 5 43. A method according to claim 42 wherein the file or stream comprises tags located to delineate the graphic objects.
44. A method according to claim 1 comprising subsequently removing highlighting by compositing the selection graphic raster with the  
10 graphic raster for display.
45. A method according to claim 1 comprising subsequently causing the highlighting to change periodically in time by periodically compositing the selection graphic raster with the output graphic  
15 raster.
46. A method according to claim 1 wherein the base graphic raster includes a plurality of selected graphic objects to be highlighted, the plurality of selected graphic objects including at least graphic  
20 objects of first and second types and wherein providing the selection graphic data comprises providing in the selection graphic data an object corresponding to each of the plurality of selected graphic objects and assigning a highlighting attribute to each of the objects, the method comprising assigning different  
25 highlighting attributes to objects corresponding to graphic objects of the first and second types.

47. A method according to claim 46 wherein providing in the selection graphic data an object corresponding to each of the plurality of selected graphic objects comprises copying the plurality of selected graphic objects from the base graphic data.
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48. A method according to claim 47 wherein copying the plurality of selected graphic objects comprises simplifying one or more of the plurality of selected graphic objects.
- 10 49. A method according to claim 2 wherein rasterizing the selection graphic data comprises assigning highlighting values to pixels in an area of the selection graphic raster corresponding to the copied selected graphic object and compositing the base graphic raster and the selection graphic raster comprises patterning areas within
- 15 the output graphic raster corresponding to the area of the selection graphic raster.
50. A method according to claim 49 comprising creating a plurality of output graphic rasters, for each of the plurality of output graphic
- 20 rasters differently patterning the areas within the output graphic raster, and displaying the plurality of output graphic rasters in rotation.
51. A method according to claim 1 wherein the base graphic raster has
- 25 a higher resolution than the selection graphic raster.

52. A system for highlighting a selected object on a display, the system comprising a data processing system executing instructions which cause the data processing system to:
- rasterize base graphic data to provide a base graphic raster,
  - 5 the base graphic raster comprising at least one graphic object including a selected graphic object to be highlighted;
  - provide selection graphic data including a graphic object corresponding to the selected graphic object;
  - rasterize the selection graphic data to yield a selection
  - 10 graphic raster; and,
  - composite the base graphic raster and the selection graphic raster to yield an output graphic raster for display.
53. Apparatus for displaying a raster image with areas corresponding
- 15 to selected objects highlighted, the apparatus comprising:
- a user interface configured to permit selection of one or more objects of base graphic data comprising a plurality of graphic objects;
  - means for producing a selection graphic data wherein
  - 20 selected objects are represented by a highlighting attribute;
  - a rendering engine configured to rasterize the base graphic data to yield a base graphic raster and configured to rasterize the selection graphic data to yield a selection graphic raster; and,
  - a compositing engine configured to composite the base
  - 25 graphic raster and the selection graphic raster to yield a graphic raster for display.